BMPdt

Gunther Nikl

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	TITLE : BMPdt		
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REVISION HISTORY			
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                 BMP Picture DataType for Workbench 3.0 or above
        Written by
         Gunther Nikl
          in 1995/98



         FreeWare

          Disclaimer

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          Author
         Final note: Use at your own risk!
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1.2   copyright

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             software
package may be used freely for non-commercial purposes. Distribution of
this software package is allowed as long as it remains unaltered.

Hereby permission is granted to distribute this software package on the
"Meeting  Pearls"  CD-ROM series.  Distribution on other CD-ROMs, disks
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series or cover disks requires a permission of the
                Author
                     .

1.3 disclaimer

The author takes no responsibility for any results of the use of this
program. This software is provided "AS IS" and there is no warranty of
any kind, so that you use this software at your own risk.

1.4 introduction

Starting with OS Release 3 the Amiga has the concept of 'datatypes', which
allow reading and viewing files of different types and formats. MultiView is
an application that utilizes these datatypes and handles any file for which
you have a data types class installed.

This datatype was created to supersede the bmp.datatype 39.4 from the 3.1 NDK
or pictdt_42_1.lha. That datatype was limited to 16 and 256 colour pictures,
handled only Windows type BMPs (but didn't check for this) and had other quite
serious bugs.

Another reason to write this datatype was that I wanted to know whether it's
indeed possible to use GNU CC to program one :^)

1.5 features

The datatype supports 1, 4, 8 and 24 bit BMPs. It handles OS/2 1.x, Windows
3.x and OS/2 2.x types of BMPs correctly. Images of 4 or 8 bit depth may be
rle compressed (it even tolerates possibly corrupted rle images).

Other features:

  – switches to V43 mode if a new picture.datatype V43 is found
  – asynchronous file I/O to speedup image loading and decoding
  – utilizes WritePixelLine8() for chunky-to-planar in V42 mode
  – can save BMPs (encoder does handle HAM and EHB pictures)

Currently displaying true-colour images requires the picture.datatype V43.
With older versions of the picture.datatype one will get an error message
saying "ERROR_NOT_IMPLEMENTED". This may change in a future version.

Please note:
  1.) Some types of BMP pictures are called to be in 'DIB' format, but these
      are simple BMPs only with another extension
  2.) Pictures from OS/2 Warp are in OS/2 2.x format, thus can be handled by
      this datatype
  3.) Compressed BMPs have often a '.rle' file extension
  4.) Windows9x type BMPs are (currently?) not supported since I don't have
      any information about this format.

1.6 installation

This "BMP" datatype distribution should consist of the following files:

- Classes/DataTypes/680x0/bmp.datatype

- Devs/DataTypes/Windows BMP
- Devs/DataTypes/Windows BMP.info

- BMPdt.guide
- BMPdt.guide.info

- Source code

Copy one "bmp.datatype" into the "SYS:Classes/DataTypes" drawer. The file "Windows BMP" and its info file should be placed in the "DEVS:DataTypes" drawer. In order to use the datatype doubleclick on "Windows BMP.info" (or reboot the machine).

1.7 faq

Q: Why is the datatype so slow with the P96 picture.datytpe V43?
A: The picture.datatype coming with P96 dithers 24bit data even for 15/16 bit screens. Either use only 24bit screens or disable dithering globally this way (posted on the PML by Olaf "Olsen" Barthel):

    setenv classes/datatypes/picture/dither 2

and then following it up with

    copy env:classes envarc:classes all

   Note: it may be necessary to create the picture drawer manually to get the
         Setenv command succeed!

Q: Can I speedup decoding in V42 mode?
A: Since the OS function graphics.library/WritePixelLine8() utilized for c2p conversation when working in V42 mode is not the fastest one possible you should consider installing a patch for this function. Highly recommended is NewWP8 from Michael van Elst available on AmiNet.
   Note: This probably affects native graphic chip-sets only!

1.8 acknowledgments

This "BMP" datatype was written from scratch using GNU CC 2.7.2.1 (ADE/GG). All required information how to create a datatype were obtained from sample source code by David N. Junod found in the 3.1 NDK.

The asynchronous file I/O functions used are taken from an example file of the original picture.datatype V43. It was written by Matthias Scheler who allowed me to use his 'ffr.c'. I made some changes to adapt it to my needs, to add save capabilities and to get it compile with GNU CC cleanly.

The class init code is loosely based on the class initialization from the AIFF
datatype 1.16 by Olaf 'Olsen' Barthel.

Futhermore, a thanks must go to Roland Mainz who pushes further datatypes
development and supplies useful example codes.

1.9 history

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40.9 (16/06/98) – class initialization partially rewritten (which fixed
                    a stupid bug in LibOpen() – previous asm code was ok)
                  – added encoder (HAM and EHB pictures saved as 24Bit)
                  – several additional tweaks

40.8 (03/06/97) – class initialization rewritten in C (hi coto ;-)
                  – a save request for DTWM_RAW returns a failure now

40.7 (11/04/97) – added missing sanity check for DTA_SourceType

40.6 (19/07/96) – buffer handling for asynchronous I/O improved to gain
                    better performance on 68040/68060 based systems
                    (size adjustment and quad-longword alignment)
                  – 8bit colour value now spreaded over full 32bit
                  – version for 68020+ equipped amigas included

40.5 (21/04/96) – added support for compresssed 4 and 8 bit images
                  – added support for the new picture.datatype V43
                  – added asynchronous file I/O
                  – other optimizations

40.4 (11/08/95) [ previous version was released a little bit to fast ]
                  – forgot to correct the normal address in the guide :(
                  – source code cleanup (reduced the executable size :-)

40.3 (10/08/95) – fixed a serious bug with 8-bit images (did not use a
                    separate pixel buffer for WritePixelLine8(), but this
                    is *absolutely* required due to a size restriction...)
                  – replaced AllocVec() with Exec pool-functions of V39+
                  – reduced stack usage

40.2 (24/06/95) – library bases are now taken directly from the classbase
                    (no additional global library bases required anymore)
                  – fixed a (harmless) bug in the bmpheader decode function
                  – freed a buffer in the image decoder at a wrong place...

40.1 (22/05/95) – initial release
```

1.10 author

  email: gnikl@informatik.uni-rostock.de

        or

```
irc:    munk on #amigager

        or

snail:  Gunther Nikl
        Ziegendorfer Chaussee 96
        Parchim
        19370
        GERMANY
```